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Notice of Allowability

Application No.

10/517,325

Examiner

Thomas R. Artman

Applicant(s)

YANG ET AL.

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/21/04.
2. ☒ The allowed claim(s) is/are 1-9.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 1/12/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on January 12th, 2006, is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner. Please see the attached PTO-1449 (2 pages).

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

IN THE CLAIMS:

Claim 7, line 1: replace the phrase "claim 5" with: -- claim 6 --

The Examiner's Amendment is required to correct an obvious claim dependency error, thus avoiding redundancy and antecedent basis issues.

Allowable Subject Matter

Claims 1-9 are allowed.

The following is an examiner's statement of reasons for allowance:

Claim 1: the prior art of record teaches some aspects of the claimed invention, including the method steps of adjusting a breast compression plate and using an optical device to measure a dimension of a mammography apparatus when the breast is compressed between the plates (see Carroll (US 4,515,165)), as well as the use of optically visible patterns (see Mosby (US 5,260,985)). Furthermore, optical profiling devices *per se* are known in the art.

However, the prior art of record neither teaches nor reasonably suggests the additional method steps of: 1) imaging the breast compression plate using the optical measuring device to provide an image of the pattern, including a plurality of local image indicia including an associated local image indicia for each local pattern indicia of the pattern, and 2) determining an associated local deflection of the breast compression plate from the associated image indicia for each local pattern indicia, as required by the combination as claimed in claim 1.

Claims 2-5 are allowed by virtue of their dependencies.

Claim 6: the prior art of record teaches some aspects of the claimed invention, including a mammography apparatus having a breast compression plate with vertical adjustment means to set the compression plate to a selected height (all prior art of record), an optically readable pattern (Mosby), breast imaging means for generating an image of a breast compressed by the

Art Unit: 2882

compression plate (all prior art of record), and optical measurement means (Carroll).

Furthermore, optical profiling devices *per se* are known in the art.

However, the prior art of record neither teaches nor reasonably suggests the additional features of 1) an optical measurement means for generating an image of the optically readable pattern, and 2) calculating means for generating a deflection of the breast compression plate from the selected height from the image of the optically readable pattern, as required by the combination as claimed in claim 6.

Claims 7-9 are allowed by virtue of their dependencies.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Besson (US 7,092,482 B2) teaches estimating breast tissue thickness between compression plates as a function of x and y coordinates based upon either pressure sensing, plate deflection models, or optical or other means; however, Besson does not teach optically imaging a pattern on the compression plate to determine deflection of the plate from a selected height.

Art Unit: 2882

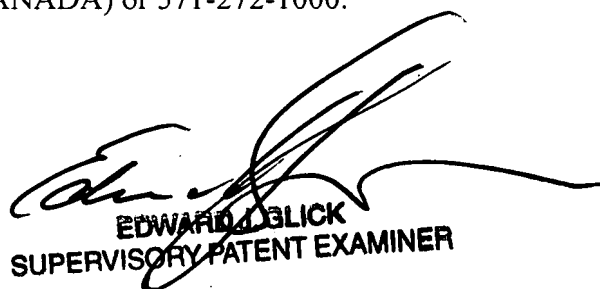
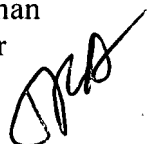
Carroll (US 4,515,165) teaches the use of an optical device for measuring the distance between the compression plates. Mosby (US 5,260,985) teaches the use of a visible pattern in order to more easily align a biopsy needle in a mammography device. Kaufhold (US 6,674,835 B2) teaches that external devices can be used to determine the compressed breast thickness in mammography devices. Colomb (US 5,757,880) teaches optical lenses with deformation for improved optical imaging of a compressed breast.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas R. Artman whose telephone number is (571) 272-2485. The examiner can normally be reached on 9am - 5:30pm Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thomas R. Artman
Patent Examiner



EDWARD GLICK
SUPERVISORY PATENT EXAMINER